TIMBER-MEASURE
By a Line
OF
More Ease, Dispatch and Exactness, then any other Way
Now in Use,

By a DOUBLE SCALE.

After the Countrey-Measure, by the Length and a Quarter of the Circumference in Round Timber. And by the Length and Side of the Square in Squared Timber, and Square equal in Flat Timber.

AS ALSO

Stone-Measure and Gauging of Vessels by the same Near and Exact Way. Likewise a Diagonal Scale of 100 Parts in a Quarter of an Inch, very Easie both to make and use.

By HEN. COGGESHALL, Gent.

LONDON,

Printed for the Author, and are to be sold by *Robert Pricke*, at the *Golden Ball* in St. *Pauls* Church-yard next *Cheapside*, where you may have Choice of Books of *Geometry*, *Perspective* and *Architecture*; Likewise *Italian*, *French* and *Dutch* Prints. 1677.

TO THE
Reader.

IF *Thou delightest in Timber-Mea-*
sure, or hast Occasion for Much ; Thou
hast here a Line so Fit for thy Purpose,
that thou canst not imagine, much less,
wish a better. For what can be more ready
and easie, then having set twelve to the
length, to see the Content exactly against
the Girt or Side of the Square. Where-
as on Mr. Partridge's *Scale the Content*
is the Sixth Number, which is far more
troublesome then with Compasses. The
Line

Line is also so clear, that one cannot ea-
sily mistake any way. Also the Girt-
Line being subdivided into Halfs and Quar-
ters of Inches, renders this way more
exact then any other way, by Decimal
Division. But a Mean Proportional is
also most easily, and exactly found hereon,
whereby Flat Timber, or such as hath Bredth
and Depth, as also Stone, &c. is also rea-
dily Measured hereby: Gauging of Vessels
is likewise readily and exactly Performed
by this Line. Besides, in great Pieces the
Content is given in Loads and Feet di-
rectly, where the Load is Accounted 40
Foot. Lastly, being small or great, it is
Measured (in a manner,) with equal faci-
lity. But I refer thee to the Book and
Rule, not doubting of thy kind Acceptance,
as it never failed of the Approbation of
all such Gentlemen, and others concerned
in

in Timber, who have seen and under-
stood it, it being none of the least Com-
mendations of it, that it is presently un-
derstood.

A 3   THE

THE
DESCRIPTION
And USE of a LINE of
TIMBER-MEASURE.

THE double Scales Contrived
by Mr. *Partridge*, are well
known, and deservedly esteem-
ed; yet in this Point of *Tim-
ber-Measure*, they are not so useful;
The Measure this way upon these
Scales, being far more troublesom and
uncertain, then on the single Line of
Numbers with Compasses. Whereas
the Line here treated of, is so easie,
speedy to work, exact, and also so in-

A 4   telligible

telligible, as that a better cannot be de-
sired.

The Line begins at 4, and is unequally
divided to 40, each Division subdivided
into four, it representing Inches, with their
Halfes and Quarters, but Numbred thus, 4.
5.6.7.8.9.1.2.3.4. Which 1.2. and 3. most
commonly signifie 10. 20. and 30.
Though sometimes, (when there is oc-
casion of Measuring any thing so small)
they signifie themselves only. At 12
let there be four Pricks in a *Rhombus*
thus .:. As also there may be such an-
other at 41. 57, for an use hereafter men-
tioned. So that as far as 40 Inches;
the Girts (by which name we call a quar-
ter of the Circumference) are actually
on the Line; Though beneath 4 Inches
it is not accounted Timber. And if
the Girt be above 40 Inches, yet shall
it be exactly Measured by this Line. As
also all Flat Timber, that is, such as
hath bredth and depth, may be speedily
Measured hereby, the Mean Proportional
                                    being

being found by the help of this Line
more easily, then on the single Line with
Compasses. Herein it excelling any other
Measure now in use.

This Line divided, as hereafter is
shewn, and thus Numbred, is to slide a-
gainst the Line of Numbers in two
Lengths, to which it is exactly equal,
which as in other Measure is to be esti-
mated as occasion requires. Ordinarily
1. 10. 100. Sometimes, 10. 100. 1000.
And sometimes ·1 or $\frac{1}{10}$ 1. 10. The
first Estimate is always meant, if it be not
otherwise limited. These things Pre-
mised, I shall shew you the Use of this
Line.

To Measure Round Timber.

TO which purpose you may take No-
tice, that in Measuring the length of
a Tree, they begin at the Ground-end, at
the

the second Chip, and Measure to the other end in feet and half-feet, (for I never knew any Buyer Measure in less Dimensions, then half a foot in the length and content, nor less then a quarter of an inch in the Girt,) then back again halfway, where they take the Circumference with a Cord, and Measure a fourth Part thereof (having doubled it twice) in Inches, and quarters of Inches. And this must be observed, that the length be given in Foot measure, and the Girt in Inch-measure, though it be one, two, three Foot, or more in length.

This done, you have three Numbers given, viz. 12. which is always the first; then the length, which is the second; and the Girt, the third; whereof 12 and the Girt are always on my Line (which I shall therefore hereafter call the Girt-Line,) the Length and Content on the Line of Numbers. But you may Note by the way, that though Timber is Measured usually in feet and half-feet; And in Inches, halfes, and quarters of Inches;

and

and I never saw any Measured other-
wise. Yet any man may Measure in less
Dimensions if he please, or the Custom
be so. But always the Length in Foot-
measure, and the Girt in Inch-Measure, as
is before said.

To come therefore to the Rule, set
12 on the Girt Line (marked as before)
to the Length on the Line of Numbers;
Against the Girt on the Girt-Line, you
have the Content on the line of Num-
bers. So that the lines being set to the
length, you have at one View against any
Girt his own Content at that length;
As also, what is got or lost by adding or
abating a quarter, or half an Inch, which
convenience no other Way of Measure
affords.

Now there being several Cases in Tim-
ber-Measure, I shall set down the most
ordinary, and give an Example of each,
whereof this shall be the first.

VVhen the Girt is from 4 to 40, and
the Content not above 100 Foot.

Ex-

1. *Example.*

At 9 foot length, and 15 inches Girt,
what is the Content? Set 12 on the
Girt-line, to 9 on the line of Numbers,
againſt 15 on the Girt-line, is 14 and a
little more on the line of Numbers,
which is the Content, *viz.* 14 foot.

2 *Example.*

At 35½ foot length, and 14¼ inches
girt, what is the Content?

Facit 50 foot. And of this way,
being the moſt eaſie, you will have the
moſt freqnent uſe.

2. VVhen the Girt being from 4 to
40, the Content is above 100 foot.

If the length be not above 9 foot, the
Content will not be above 100 foot:
therefore,

Firſt, if the length be 10 foot or a-
bove, ſet 12 to the length in the firſt
length of the line of Numbers; ſo ſhall
your Content fall in the ſecond length,
But now 1 in the middle of the line is
100: the 2 following 200, &c.

Ex

Example.

At 18 foot length and 31 Inches girt,
what is the Content ?

Set 12 to 18 in the first length against
31, you have 120 foot.

Secondly, if your length be between
9 and 10 foot, and yet the Content fall
beyond 100, as it may about 39 inches
girt. Set 17 in the girt-line (in stead of
12) to the double length, in the first
length : so shall the girt point out the
Content in the second length, 1 in the
middle of the line, being 100, &c.

Example.

At 9½ foot length, and 39½ inches girt,
what is your Content ? setting 17 to 19
in the first length, the Content will be
found 103 foot. Or use the way directed
in the next Case. Which is

When the girt is above 40 inches.

Having set 12 to the length, use the
half-girt in stead of the whole, and ob-
serve the Content; for if the Load be
40 foot, 1 in the middle of the line of
Num-

Numbers is 1 Load, the 2. 3. 4. &c. following 2. 3. 4. &c. loads directly. Then the odd tenths over and above, must be accounted 4 foot, each tenth the halfes 2 foot, &c.

At 11 foot length and 51 inches girt, what is the Content? Set 12 to 11; against 25½ in the girt-line, you shall find four Loads and 9¾, which make 39 foot more.

But if the Load be accounted 50 foot, then account your Number Pointed out by your half-girt, as it really and properly is, and multiply it by 4, which shall be your Content in feet, as in this Example, 49¾ multiplied by 4, maketh 199 foot.

This Quadruplation may be avoided by dividing the beginning of the girt-line as far as 6, as those are between 3 and 4, viz. each into 10, and then subdivided into 4, and the beginning of the first length of the line of Numbers, as the beginning of the second length. But the line

line being clear for the ordinary and frequent use, I am loth to obscure it for that, which perhaps will not fall out once in a year or more, especially seeing the former way is unquestionably true.

Although the two next propositions may seem needless, because under four Inches (some say six Inches) it is not accounted Timber, yet for that there may be occasion of measuring *W ongs*, *Knees* of Timber, *Studds*, *Joysts* or *Sparres*, of smaller Dimensions, as also to shew the universality of my line, I shall set them down. And therefore,

When the Girt is less, then four Inches.

I have before said that 1. 2. and 3. on the Girt-line, sometimes signifie themselves only, as in this Case, wherefore set 12 to the length; If the Girt be against any part of the line of Numbers, it shall point out your Content: but 1 in the middle of the line of Numbers will be but $\frac{1}{12}$ of a Foot.   B   But

But if your Girt falleth beyond the line of Numbers, remove 12 to your length in the 2 length, so shall you have the Content, 1 in the middle of the line of being 1 Foot.

Example of the first:

At 15 Foot length and 3 Inches Girt, what is the Content?

Facit $\frac{94}{100}$ or 9 tenths of a Foot.

Example of the second.

At 15 Foot length and 3 $\frac{1}{2}$ Inches, girt, what is the Content?

Set 12 to 15 in the first length of the line of Numbers, so shall 35 or 3 $\frac{1}{2}$ point out 1 $\frac{1}{4}$ Foot in the second length.

When the Girt is four Inches or above, and the Content Amounteth not to 1 Foot.

In this case set 12 to the length in the
second

second length of the line of numbers, so
shall the Content be in the first length,
1 in the middle of the line being 1 Foot,
the Divisions in the first length being
ninetenths of a Foot.

Example.

At 6 ½ Foot length and four Inches
girt, what is the Content.

Set 12 to 65 or 6⁻, in the second length,
so against 4 you have $\frac{22}{100}$ a Foot, which
is not ¼.

So much for round Timber.

Squared Timber.

As for Timber that is squared, it is
measured as the round, for setting 12 to
the length, against the side of the Square
standeth the Content, which needeth no
Example.

*To Measure flat Timber that is, such as hath
Bredth and Depth.*

Having measured the length in Feet,

as

as before, Meafure the bredth and depth
in Inches and Parts of Inches. Then find
the mean proportional between them,
which mean is the fide of the fquare equal
to the Bafe. Then having the length
in Feet, meafure it as next before.

This mean is found by the help of my line
with much readinefs and exactnefs. For,

Set the greater number on the girt-line,
to the fame on the line of numbers, a-
gainft the lefs on the line of numbers is
the mean proportional on my line, or fet
the lefs number on the girt-line to it felf
on the line of numbers, againft the grea-
ter number on the line of numbers, ftand-
eth the faid mean, on the girt-line.

Example.

At 10 Foot length, 21 Inches bredth,
and 8 ¾ Inches depth, what is the Con-
tent?

Set 21 on the girt-line to 21 on the
line of numbers, againft 8 ¾ on the line of
numbers

numbers ſtandeth 13, 36 or 13, a quarter and half quarter, on my line neer enough.

Or ſet 8 $\frac{1}{2}$ on the girt-line againſt it ſelf on the line of numbers, againſt 21 on the line of numbers ſtandeth the ſame 13, 36. on the girt-line, as before.

Then ſetting 12 to the length 10, againſt this 13, 36, on mine you have 12.4 Foot which is not an half.

This mean in a Caſe of a Fraction, ſhall give you no trouble, for if with a Pencil, Chalk or any thing that maybe wiped off without damage to your Rule, you make a fine mark at this mean, and then ſet 12 to the length, and this mark without defineing it ſhall point out the Content.

Thus, that which is done in natural numbers, by Multiplying the 2 numbers together, and Extracting the ſquare Root of the Product, (though by the Logarithms a neerer way) and with the *Compaſſes*, by dividing the ſpace between them upon the line of numbers into 2 equal parts, is here done with the ſame eaſe,

B 3   ſpeed

speed and exactness, that any single pro-
portion is wrought with, on the double
Scale of numbers.

There are also *Railes* three square for
Pales, which were square, and then sawn
through from edge to edge, which may be
thus measured.

It they were exactly squared, before
they were sawn, measure them as if they
were whole, and take half the Content.

But if they had bredth and depth, or
were not exactly squared before, take the
mean proportional between half the Per-
pendicular and the whole Base, or between
half the Base and the whole Perpendicular;
which shall be the side of the square, and
then measure as before.

To find how many Inches in length make a
Foot of Timber, at any Girt given in
Inches, as far as 40.

Set the girt on the girt-line, to 1 at the
beginning of the line of numbers; against
this

this 41.57 is the leng h in Inches, which makea Foot of Timber at that girt.

So much for Timber-meafure by this line, which how much it furpaffeth the way by *Compaffes* needs no more proof, than the judgment of them that h ve feen and underftood both wayes; this being preferred by feveral, as wel Gentlemen as Timber-Mafters, Carpenters, and Ship-Wrights, who have defired thefe Rules.

Stone-Meafure

Stone may be meafured as fquare or flat Timber, only the length wou'd be meafured in Feet and Decimals of Feet, the fide of the fquare (it it be fquare) or the bredth and depth in Inches and Decimals of Inches. Whereby the mean proportional being firft found; the Content will be alfo found in Feet and Decimals of Feet, as in the meafure of fquare or flat Timber aforegoing.

Gaugeing

Gaugeing of Vessel.

The Gauge-pipe for Wine is marked on the Rule with *W*, of Beer with *B*. Wherefore having measured the length of the Vessel in Inches and tenths, as also the Diameter at the Bung and at the Head, first find the mean Diameter thus.

Take the difference between the two Diameters, this difference Multiply by 7, add the Product to the less Diameter; so as the figure representing hundreds, be set under the unite-place of the less Diameter, and the rest forward toward the right hand, for a Centesimal, the same shall be the mean Diameter.

Then set the Gauge-point against the length, in the line of numbers, and against the Mean-Diameter on mine, is the just content.

Example.

Let the length be 34:½ inches. The
Dia-

Diameter at the Bung. 29. 4 inches,
the Diameter at the Head 25. 3, inches.
the difference is 4: 1 ; which multiplied
by 7 makes 287, which I add to the lefs
Diameter thus, 25. 3 which 28.17.is the
meanDiameter.   2. 87
                 ―――――
                 28.17

   Then fetting theGauge-point ofWine
or Beer refpectively, (for example of
Wine againft 34 ½: Againft 28. 17. or
28. 2. you will find 93 Gallons the
juft content.

   As for the double Scale of numbers,
at 2 equal lines in each 2 lengths, though
the meafure of *Board* and *Plank* on them,
be as the meafure of Timber on this, by
fetting 12 to the length, and againft the
bredth ftandeth the Content (or by fet-
ting 12 to the bredth, and againft the
length ftands the Content) for which
caufe, as alfo for working proportions of
other forts, I have caufed them to be put
on to the other flat of thefe Scales.

   Yet the meafure of Timber upon
                              them

them is fo troublefom, as there is no in-
during it, (I mean this way) the way by
Compaffes on the fingle line far furpaffing
it. For though the *Compaffes* ftand upon
a fourth number, yet there is not the leaft
neceffity of determining what that fourth
number is, which yet muft be exactly de-
fined on the double Scale, and fo transfer-
red from one line to the other.

My Line alfo being actually divided
into Halfes and Quarters of Inches, is
ready for the Meafurers ufe. The Tim-
ber in this County of *Suffolk*, (and for
ought I know elfwhere) not onely what
is for Building Ships of all forts, as alfo
what is Shipt for *London*, or elfewhere, be-
ing always meafured the length in feet,
and the quarter of the Circumference or
Girt, in Inches, Halfes and Quarters, and
not otherwife.

Whereas on the Line of Numbers, the
large Divifions are fubdivided into ten
Parts, where want the Quarters actually,
and

and after into 5, where there are wanting
both Halfes and Quarters actually, (the
Quarters in this case being hard to pitch
on) and after into 2. This is no great
inconvenience in my Measure, the Line
of Numbers representing only Feet, *viz.*
in the length and content, in which, as I
said before, I never saw less dimensions
taken notice of then feet and half-feet.
But where the Custom is to measure to
a quarter of a Foot, it may be done so,
as well this way as the other.

Concerning the Rules:

Let them, as other double Rules, run
between two Loupes, upon a Spline, ei-
ther planed so, or glewed into one, with a
furrow in the other, and of one or two
foot in length. If of one foot length, the
Line of Numbers is ordinarily 11 inches
precisely, and on this we may measure to
a foot as far as 200 foot. But if they be
2 foot

2 foot long, far farther to half a foot, the Lines being near 23 inches.

As to that of a Foot my Advice is this.

Let the bredth of each be about six tenths of an inch, let both the Loupes be fixed to that which hath the Spline on it, so the other shall always run in one Loup, whitherway soever you move it. And on this Account I call one Moveable, the other fixed.

On this Loup'd or Fixed Rule, let the Line of Numbers begin at the end next you, when it lieth toward your left hand, that this Girt-line may slide against it on the right hand.

To the outward Edge of this Loup'd Rule on this flat, let the Foot be divided into 100 parts.

In the other Flat, let the double Scale of Numbers be put on, but let them begin at the other end, so shall the moveable Rule be to your right hand, when

the

the beginning of the Lines are toward you, which I hold convenient.

On this Flat to the left Hand, let the foot be into 12 inches; each into ten parts for Decimal Measure. So is it Fitted for any one that useth a Two-Foot Joynt-Rule besides, to measure the Girt or any other measure.

But if any Gentleman or other please to have this Fitted for other Measures, it may be conveniently and easily done thus. Let the moveable or furrowed Rule be an inch longer then the other, that being drawn out to 2 Foot in length, it may be there Fixed by a small Vice-Nail through the Loup, which is at the end of the single line of Numbers, the Screw-Nut being let into the Rule before the Loup be fixed; it having also two Shouldrings, that the Loup being Fixed, it may also be immoveable. One Pin going through on one side the said Screw-Nut, the other on the other.

Then

Then there being room towards the out-
side of the moveable Rule. Let there
be put on the same Flat on which the
Girt-line is, 12 inches, divided into
Halfes, quarters and half-quarters, but
Numbred from the Loup, 13, 14, 15,
&c. to 24. at the end.

On the other Flat of this moveable
Rule, next the outward edge, let be 12
inches divided, as next before, into halfes
quarters and half-quarters. But numbred
from the said end to the Loup, with 1. 2.
3.4. &c. to 12 at the Loup.

So any Girt or thing of one Foot or
under, may be measured on this last. But
if it be above, it may be measured on the
other Flat, beginning at the empty Loup,
and so toward the end of the moveable
Rule.

Or it may be annexed to the Carpen-
ter's Two-Foot Joynt-Rule, having two
Loups fixed to the immoveable Leg, the
Spline being also glewed into the said
Leg,

Leg, and the lines of Numbers, and this line put on in every respect, as before. But let the Inch-lines be put on thus.

On the Flat whereon the Girt-line is, let the inches be put on to the inner Edges of the Joynt-Rule, to begin at the double end with 1.2.3. and to 24. at the single end, subdivided into halfes, quarters and half-quarters: On the other Flat let them be put on in the like manner, but to begin at the single end. Also the Foot into 100 parts, and into 12 inches, each inch into 10 parts, maybe put on the single Rule toward the outward Edges, one on one Flat, and one on the other.

There are two Properties which may be Noted on this Line, which (if there be no other use of them,) will try the truth of the Divisions.

1. Set 10 on mine to 1 in the middle of the Line of Numbers, which must be reckoned 100. So shall every division and

and subdivision on my Line stand against
his own Square, on the line of Numbers,
so that the square Root of a Number is
easily found.

2. What number on mine, stands a-
gainst 1 in the beginning of the Line of
numbers; against the squares on the Line
of numbers, shall stand the numbers, that
are in Arithmetical proportion from the
said number. As set 4 on mine to 1 on
the Line of numbers.

Against 4. 9. 16. 25. 36. 49. 64. 81. 100.
    on the line of Numbers.
Stand 8. 12. 16. 20. 24. 28. 32. 36. 40. on
    mine.

So setting five as above mine, against
the said square, shall stand 10. 15. 20. 25,
&c.

To divide the Girt-line.

Prepare a Diagonal Scale of one hun-
dred in the Integer, ten Integers where-
of

of shall be exactly equal to the whole Line of numbers of 2 lengths, against which this Line is to slide, but there will not be need of above 7 of the said Integers.

Having fitted the beginning and end of your Line to the beginning and end of the Line of Numbers.

The end (at the beginning) shall be 4, the other 40. Set of the Arithmetical complement of 4 from the beginning, so shall you have 10 Figured, 1. Then may you set of the Divisions beneath ten by their Arithmetical Complement; but they must be set off from 10 toward 4. All the Divisions above ten shall be set off by their proper Log: Omitting the *Judices*, from ten toward 40. But because my Line is subdivided into halfes and quarters, not into Decimals, 25 must be accounted the quarter, 50 the half, and 75 three quarters.

The Complement Arithmetical of 43. 979 shall give you ten.

C

The

The Complement Arithmetical of 9.75
neglecting the *Index*, set off from ten to-
ward four, giveth you $9\frac{3}{4}$ it being, 0.109
0.222 giveth you $9\frac{1}{2}$ 0.338 giveth $9\frac{1}{4}$.

But then above ten, 0.107 giveth $10\frac{3}{4}$
0.212 giveth $10\frac{1}{2}$ 0.314. $10\frac{3}{4}$ 0.414. $11\frac{1}{2}$
Always neglecting the *Index*.

A Diagonal Scale of 100 Parts in a quarter of an Inch.

FINDING a Scale of this Na-
ture in *Wings* Book of Sur-
veying, made by Mr. *Hayes*
being above three inches
broad, and having in 20 Chains, and
the Diagonal 1760 Pricks; which ren-
der it troublesom to make, yet na-
med by the Author *J. W.* with seve-
ral hard Names as troublesom to speak;
I here offer the ingenious Surveyour one
in little more then half the Bredth, and

long

long as he pleaſe, without one Prick, and but four ſhort Lines more than his of the ſame length, yet of as eaſie and certain uſe as his or any other.

Let the bredth of the Rule be about one inch and eight tenths and an half, or 1. 85 inches. Let the length be as you pleaſe, divided into transverſe parallels equally, at a quarter of an inch diſtance for the Chain Lines. Setting of two tenths toward the left hand, for Figures for Numbring the Chains, draw the firſt long or Link-parallel, repreſenting o, draw 20 long parallels more, at about eight Cents of an inch equal diſtance from this and one another, which ſhall be the Link-parallels.

Let thoſe parallels that repreſent 5. 10. and 15, *viz.* The 6th, 11th, and 16th from the Figures, or left hand edge of the Scale be only ſcratc'ht through the Chain-parallels, not

drawn

drawn clean through, except through the Diagonal Integer or quarter of inch, being the uppermoſt, where they muſt be drawn through.

On the top of the Scale over the ſaid 5 and 15, ſtamp or cut a 5 over 10 a Cypher: as alſo put a Cypher between every ſcratch in the ſaid Link-line repreſenting 10. So will the Scale be divided as it were into two Scales, by the ſaid row of Cyphers.

Figure the Chain-lines as in other Scales from the Diagonal Integer downward.

Divide the uppermoſt Integer at each end into five equal parts exactly. Draw Diagonals from o on the Left hand to the firſt on the Right, and from the firſt on the Left to the ſecond on the Righr; and ſo on as in other Diagonal Scales. So whereas in other Scales you have your Diagonal Integer divided into ten one

way,

way, and ten the other; here it
divided into five one way, a nd twe
ty the other. And this is eafily ma
intelligible and certain in working 1
it.

The Ufe.

If the place of tens in your Link
be 0. 2. 4. 6. or 8. (which Figure
or at leaft two of the m, I would have
fet at the left end of the faid Diagonal
Integer againft their refpective Dia-
gonals) then ufe the firft or Left
hand Scale. But if the place of tens
in your Links be 1. 3. 5. 7. or 9.
ufe the fecond or Right hand Scale.
For that Diagonal which is 20 in the
firft Scale, is 30 in the fecond, that
which is 40 in the firft, is 50 in the fe-
cond, and fo the reft.

An Example of each.

To take off ten Chains and 46 Links
or 10. 46. Chains, set one Foot of the
Compasses on the tenth Chain-parallel,
on the Link-parallel reprefenting 6, in
the firft or left hand Scale, and extend
the other to the Diagonal of 40 in the
faid Link parallel of 6. But to take
off 10 Chaines and 56 Links, fet one
foot on the faid Chain-line of 10, and
the Link-parallel reprefenting 6 in the
right-hand Scale, and extend the other
Foot to the faid Diagonal, which is
40 in the firft Scale, but 50 in this.

This you will finde after a very little
practice to be no trouble, but very cer-
tain and exact. And being in a fmall
Volume, it is not troublefom. It will
be alfo made in as much lefs time then
the other, as fo many hundred Pricks,
which are as above is faid, 20 Chaines
no lefs then 1760 : in every
C 4   Cha

Chain there being 80 : so the longer
the more. Which Confiderations of
time and trouble, will render this cheap-
er, and being as eafie and exact as any
other, will I hope be at leaft as well ac-
cepted.

H. COGGESHALL.

Some

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Some Additional Notes.

1. NOTE, Relating to Page 7. line 9.

TO what Number foever you set 12 ; 17 will ftand againft the double thereof, but it will ftand a little over or beyond, becaufe fome-thing lefs then 6 inches make a foot at 17 inches fquare; fet therefore 17 fo, and in this Example you fhall finde 10½ foot near.

2. NOTE, concerning Gaging.

Having the difference between the two Diameters in inches and tenths; On the double Scale of Numbers, fet

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ir on the firſt to 7 on the ſecond; againſt
the difference on the firſt, will be the
Number on the ſecond, to be added to
the leſs Diameter, 1 in the middle of
the ſecond being one inch. If this Num-
ber be above 10, as it will be, if the
difference be above 14 and an half; ac-
count 1 at the beginning of the firſt
10, ſo ſhall you have this Number on
the ſecond; 1 in the middle of the
ſecond, being 10.

3. NOTE, Relating to Page 21. line 15.

In ſtead of the Vice-Nail and Screw-
Nut there mentioned; a Pin that go-
eth full through will do as well, and is
readier for uſe, therefore they may be
omitted. The length of the move-
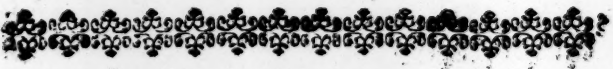able Rule ſhall not need to be above
12 inches and an half.

An Example of Stone-Meaſure.
Let a Stone be 6 foot, and 35 centes
long,

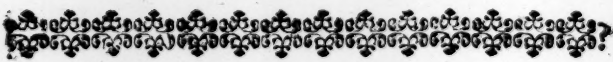long, 36 inches and an half broad, 5 inches and 7 tenths deep :

Setting the bredth to it self, against the depth, you have a little short of 14 and an half, where make a fine mark with chalk or coal; Then remove 12 to the length, and this mark will point one 9 foot, and about two tenths, which is not a quarter.

F I N I S.

ERRATA:

Page 7. line 10. read of 12) *home to the*, l. 18. r. 103 *foot near*, l. 20 r. *When*. p.8 l. 1. r. 4 *fo t each tenth*, p.9. l. 15. r. *When*. p. . . . . r. *in the first length*, p.10 l. 15. r. 5 *When*.p. . . l. 5. *dele wine*.p. 12 l. 5 *dele and*. p. 14. l. 17. r. *The use of the division at* 41. 57. p. 15. l. 17. r. *tenths of inches*. p. 1 . l. 2. r. *Gage-point*. l. 3. r. *of Beer with B or A*. l. 16. r *Content in Gallons*. p. 24. l. 16. r. *on mine*. l. 17. r. *squares*.

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Licensed,

May 25. 1677.

ROGER L'ESTRANGE

And Entred according to Or-
der.

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These RULES with all other Mathematical Instruments, are made by Walter Henshaw, at the Globe and Marriner, near the Hermitage-Bridge, near Wapping.